REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 9-16 remain active in the application subsequent to entry of this Amendment.

Independent claims 9 and 11 are amended to specify that the cadmium active substance contains β-cadmium hydroxide or β-$Cd(OH)_2$ as discussed throughout the specification, in particular in paragraph [0007]. The coating of polyethylene glycol (PEG) formed on the surface of the cadmium negative electrode or on the surface of a cadmium active substance inhibits the growth of the platy crystals of β-cadmium hydroxide (β-$Cd(OH)_2$); see the discussion in paragraph [0012]. Accordingly, basis for the amendments made to claims 9 and 11 will be clear from the description of the invention as noted above (and elsewhere in the description).

The present invention solves the problems as discussed in the specification [0003] to [0005]. Namely, particles of hexagonal β-cadmium hydroxide (β-$Cd(OH)_2$) may cause clogging of the pores of the cadmium negative electrode, or cover the surface of the active metallic cadmium. These problems especially occur in the sintered nickel coated electrode substance, which has fine pores.

The issues raised in the current Action all relate to prior art-based rejections. There are four of them, items 4-7 and four references are applied, three of them newly cited in the current Official Action. Items 4 and 5 are directed towards claims 9, 11 and 13-16 while items 6 and 7 are directed only to claims 10 and 12. Common to all of these rejections is the examiner's reliance on Oshitani JP 56-35368. Furnished with the Official Action is an English Abstract of this citation. As explained in more detail below, applicants believe this Abstract to be insufficient to fully characterize and explain portions of the description in this document which may (or may not) be pertinent to the problems to which the present invention is directed. In the comments that follow paragraphs set out in italics have been prepared by a qualified English translator based upon the content of this newly cited document. These passages will also serve to make it clear that the intent of the document applied neither addresses the problems to which the present invention is directed nor does it provide a viable solution. In fact, processing undertaken in the applied reference removes the PEG coating material thus making it irrelevant to the final product.

Stiker and Kobayashi, both secondary references, merely show a cadmium negative electrode made by filling cadmium active substances into a sintered nickel electrode substrate. These references fail to show an addition of polyethylene glycol. Additionally, because neither reference addresses the problems to be solved by the present invention, there is no motivation[1] to add the polyethylene glycol to the sintered nickel electrode substrate.

The Oshitani reference requires an iron fiber sintered body on which a nickel plate is applied. The claim of Oshitani references says:

> *"A manufacturing method of a cadmium electrode plate for alkaline battery characterized in that an iron fiber sintered body having a porosity of 84-95% is plated with Ni, the sintered body is impregnated with an aqueous solution containing cadmium nitrate and a small amount of an organic corrosion inhibitor such as methyl alcohol, polyethylene glycol or carboxymethyl-cellulose, the impregnated sintered body is dipped in an alkaline solution to convert cadmium nitrate into cadmium hydroxide by chemical neutralization so that the cadmium hydroxide is filled in the electrode."*

Oshitani also states that the iron fiber sintered body has large porosity in comparison with the nickel-sintered body. Oshitani reference says:

> *"The porosity of the iron fiber sintered body is very large in comparison with that of the nickel sintered body, which is restricted (to) about 80%. Pores spaces exist in the sintered body is several times of the conventional nickel sintered body."*

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[1] The mere fact the references can be modified or combined is not enough. As stated by the Court in *In re Fritch*, 23 U.S.P.Q.2d 1780, 1783-1784 (Fed. Cir. 1992)(emphasis added):

> The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification.

In case of an iron fiber sintered body having a larger porosity, the β-cadmium hydroxide (β-$Cd(OH)_2$) will not cause clogging of the pores of the cadmium negative electrode, thus the problems to which the present invention is directed do not exist.

Further, according to Oshitani, polyethylene glycol is filled in the sintered body together with the cadmium nitrate, then the polyethylene glycol is removed by heating before the cadmium nitrate is converted in cadmium hydroxide. Oshitani references says:

> *"The sintered body is impregnated with an aqueous solution (cadmium nitrate solution having gravity 1.76 added with 5% methyl alcohol) at room temperature (15-20 ℃) under vacuum condition. An impregnated time period is about 10 minutes. After impregnation, it is dried at 90 ℃ during 10 minutes to remove water and methyl alcohol. Then, the cadmium nitrate is converted into cadmium hydroxide in caustic soda having gravity 1.28 with 30 minutes. Thus obtained electrode plate is subjected ordinal chemical treatment in the caustic soda having gravity 1.28 to remove impurities. Finally, thus obtained electrode plate is cut into a suitable size to use as a negative electrode for an alkaline battery such as nickel-cadmium or silver-cadmium."*

Thus as clearly stated in Oshitani, at the time cadmium hydroxide is generated, polyethylene glycol has been removed. Therefore, there cannot be a coating film formed on the surface of Oshitani's cadmium negative electrode or a surface of the cadmium active substances.

Additionally, according to Oshitani, polyethylene glycol is used for a totally different purpose – as a corrosion inhibitor to prevent the iron fiber sintered body from corroding when the iron fiber sintered body is immersed in an acidic solution containing the cadmium nitrate. The purpose of the polyethylene glycol is completely different from the present invention.

Treger merely shows molecular weight of polyethylene glycol which is not in dispute. It is not applied to a cadmium negative electrode.

As explained above, no reference shows a polyethylene glycol coating covering a surface of the electrode substrate or a surface of the cadmium active substance.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited.

Respectfully submitted,

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